(54) SYSTEME D'ACQUITTEMENT DE LECTURE D'UN MESSAGE RECU SUR UN TERMINAL MOBILE
(54) SYSTEM FOR ACKNOWLEDGING THAT MESSAGE RECEIVED ON A MOBILE TERMINAL HAS BEEN READ

(57) The invention concerns a system for acknowledging reading a message sent by a transmitting terminal (1) and received on an addressee mobile terminal (2). The invention is characterised in that said transmitting terminal (1) comprises means for: supplying an identifier of the mobile terminal (2) whereto the message is addressed; generating a text to be sent; indicating a return mode for acknowledging reading accompanied with an associated identifier; said mobile terminal (2) comprises means for: displaying the message sent by the transmitting terminal (1); sending a reading acknowledgement in accordance with the return mode specified. The invention is applicable to a mobile telephone system.
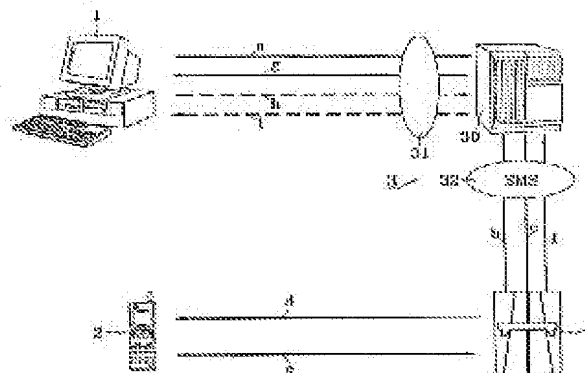
(54) Titre : SYSTEME D'ACQUITTEMENT DE LECTURE D'UN MESSAGE RECU SUR UN TERMINAL MOBILE
(54) Title: SYSTEM FOR ACKNOWLEDGING THAT MESSAGE RECEIVED ON A MOBILE TERMINAL HAS BEEN READ
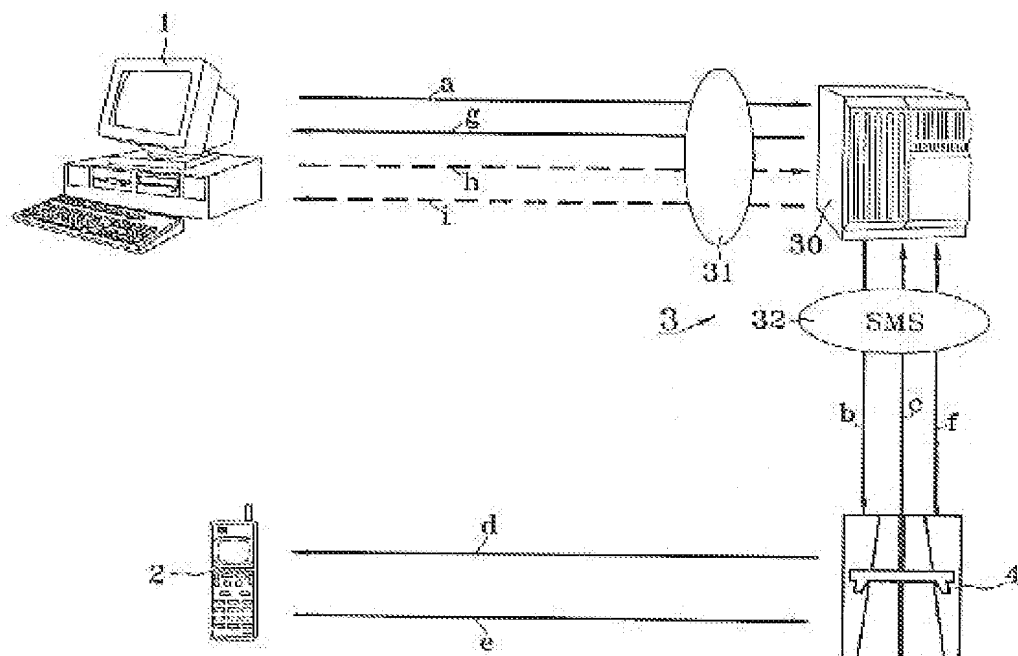
(57) Abrégé/Abstract:

The invention concerns a system for acknowledging reading a message sent by a transmitting terminal (1) and received on an addressee mobile terminal (2). The invention is characterised in that said transmitting terminal (1) comprises means for supplying an identifier of the mobile terminal (2) whereto the message is addressed; generating a text to be sent, indicating a return mode for acknowledging reading accompanied with an associated identifier; said mobile terminal (2) comprises means for: displaying the message sent by the transmitting terminal (1); sending a reading acknowledgement in accordance with the return mode specified. The invention is applicable to a mobile telephone system.

A B S T R A C T

A SYSTEM FOR ACKNOWLEDGING THAT A MESSAGE RECEIVED ON A MOBILE TERMINAL HAS BEEN READ

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A system for acknowledging that a message sent by a
sender terminal (1) and received on a destination mobile
terminal (2) has been read. According to the invention,
said sender terminal (1) comprises means for: a)

10 supplying the identifier of a destination mobile terminal
(2) for the message; b) generating the text of the
message to be sent; and c) specifying a method of
returning the read acknowledgment, accompanied by an
associated identifier. Said mobile terminal (2)

15 comprises means for: displaying the message sent by the
sender terminal (1), and for sending a read
acknowledgment using the specified method of return. The
invention is applicable to mobile telephony.

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A SYSTEM FOR ACKNOWLEDGING THAT A MESSAGE RECEIVED ON A MOBILE TERMINAL HAS BEEN READ

The present invention relates to a read acknowledgment system for acknowledging that a message
5   sent from a transmitter terminal and received on a destination mobile terminal has actually been read.

The invention applies in particular to the field of mobile telephony (GSM, GPRS, UMTS, etc.), and more particularly to telecommunications services for which the
10 sender of a message seeks to have acknowledgment that the message has been read, or acknowledgment that it has merely been received, to be returned by the addressee of the message from the destination mobile terminal.

At present, there exist various services that
15 propose sending messages to mobile terminals. By way of example, these terminals can be pagers or GSM terminals handling the short-message service (SMS). Access can be made to the service via various means: Minitel, Web navigator, electronic mail, via a call center, etc.

20 Nevertheless, those services provide no guarantee that the message received on a mobile terminal has actually been read, nor even that a message has at least been received by said mobile terminal.

Thus, the technical problem to be solved by the
25 present invention is to provide a read acknowledgment system for acknowledging that a message sent by a sender terminal and received by a destination mobile terminal has actually been read, thus enabling the sender of a message to be certain that the message has been read at
30 the remote mobile terminal, and as a subsidiary matter that it has at least been received, and thus making it possible to respond to the reading of the message by sending another message or a voice call.

According to the present invention, the solution to
35 the technical problem posed consists in that:

· said sender terminal comprises means for:

· providing an identifier of the destination mobile terminal for the message;

· generating the text of the message to be sent; and

· indicating the method whereby read acknowledgment should be returned, accompanied by an associated identifier; and

· said mobile terminal comprises means for:

· displaying the message sent by the sender terminal; and

· sending a read acknowledgment using the specified method of return.

Access to the acknowledgment system in accordance with the present invention is thus made by three functional categories of terminal:

· one category for sending messages, i.e. the sending terminal;

· another category, i.e. the mobile terminal, equipped to receive messages, to process messages, and to return an acknowledgment for each message received; and

· finally the last category enabling acknowledgments to be received, which category can physically be the same as the sending terminal used for sending the message.

When a Web navigator is used for sending the initial message, the sender connects a terminal to a Web server reserved for the acknowledgment service and is then offered control elements for receiving the following items:

a) the identifier (number) of the mobile terminal to which the message is to be sent;

b) the text of the message to be sent;

c) selecting the way in which the acknowledgment is to be returned, as an electronic message in the form of a text (e.g. e-mail, SMS message), or a message generated by voice synthesis (telephone);

d) the identifier corresponding to the selection made in c) to which the acknowledgment should be sent by

said electronic message in the form of text or said
message generated by voice synthesis, such as:

    · an e-mail address for e-mail;

    · a GSM or other number for SMS messages; or

5   · a GSM, PSTN, ISDN, etc. telephone number for voice
synthesis;

    e) optionally, the identifier of telecommunications
means where the sender of the message can be reached
(GSM, PSTN, ISDN etc. number); and

10   f) also optionally, a request for an acknowledgment
that the message has been received to be sent by said
method of returning read acknowledgment (acknowledgment
of receipt returning to the sender by the same path as
read acknowledgment).

15   By way of example, pressing a button available on
the interface serves to confirm and send the message over
the telecommunications network to the destination mobile
terminal.

    When a single message is sent to a plurality of
20   destination mobile terminals, control element (a) may
accept a plurality of identifiers (numbers), with the
same message being sent to each of the specified mobile
terminals. Acknowledgment is performed as though the
messages had been sent one by one, i.e. there should be
25   as many acknowledgments as there are identifiers.

    In order to increase the effectiveness with which a
message is sent, and if possible in the Web navigator,
control elements (c), (d), (e), and (f) contain default
values as implemented last time they were used.

30   At the message receiving end, the mobile terminal
may vibrate or ring as a function of its facilities and
of the user's preferences. By way of example, the signal
is activated on receiving an SMS message on GSM.
Depending on the particular mobile terminal, it is
35   possible either to read the message immediately (message
is already displayed on the screen), or else after
performing some action specific to using the terminal.

Displaying a message corresponds to implementing a first interface (A) giving the addressee two choices:

1) sending the acknowledgment that the message has been read to the originating terminal;

2) sending a voice call to the sender of the message, if control element (e) so requires.

After sending the acknowledgment (choice 1) or after making a voice call (choice 2), a second interface (B) gives the addressee two new choices:

1) archiving the message; and

2) deleting the message.

After choice (1) or (2) has been made by interface (B), the mobile terminal returns to its prior state, i.e. to its state prior to receiving the initial message.

If another message arrives, the preceding message is archived, and it is the new message which is presented on the interface (A) if the terminal displays messages immediately.

If a message is archived and is then called up again on the screen of the mobile terminal, the total number of choices available from interfaces (A) and (B) are again proposed to the user, with the exception of choice (1) of interface (A) if the message has already been properly acknowledged.

It should be observed that the interface choices may be made by pressing on a button or by issuing instructions for voice recognition, for example.

Acknowledgments are received via conventional methods such as consulting e-mail, telephone calls, consulting messages on a network answering service (e.g. "Top Message").

Various options are possible:

Option 1: the addressee of the initial message can use the mobile terminal to call a call center and dictate the items needed for the acknowledgment.

Option 2: acknowledgment can return in the form of a voice-synthesized message left on a network answering

service (e.g. "Top Message"), or a message which is read out when the number left under control element (e) is taken off-hook.

Option 3: an acknowledgment that the message has been received, but not read on the mobile terminal may be returned systematically over the same channel as the acknowledgment that the message has been read.

A scenario for use of the acknowledgment system of the invention is described below in the context of health care, and more precisely for traveling nurses, working in the context of a home hospitalization service, e.g. traveling from one home to another by car.

On receiving information concerning a patient, or if it becomes necessary to change scheduling at the last minute, possibly associated with synchronizing patient care, the service manager decides to inform the nurse in question, presently visiting patients, it being assumed that the nurse possesses a GSM mobile terminal which displays received SMS messages directly.

The manager connects to the Web service providing acknowledgment in accordance with the invention and fills in the following control elements:

a) number of the nurse's GMS terminal;

b) text of the message to be sent;

c) selected method of returning the acknowledgment, with there being three possible variants:

variant 1:

d) e-mail address of the manager (already filled in during earlier use);

variant 2:

d) the telephone number of the manager's extension which may benefit from a network answering service of the "Top Message" type (already filled in during earlier use);

variant 3:

d) the manager's GSM telephone number (already filled in during earlier use);

e) the telephone number of the manager's extension (already filled in during earlier use), for a direct telephone call; and

f) the manager decides not to check the option
5   requesting mere acknowledgment of receipt of the message.

The manager sends the message and the message is received a short time later in the nurse's GSM terminal.

If the nurse's GSM terminal is busy, the network will make attempts at regular intervals to send a
10   message. If, after a certain length of time or after some number of attempts, it has not been possible to send the message all the way to the nurse's GSM terminal, then the network sends a message back to the manager over the path specified for the read acknowledgment, informing the
15   manager that the message has not even been delivered.

The nurse will have taken the precaution to put the terminal on the "vibrate" option when it receives SMS messages so as to remain discrete with respect to a patient, should the nurse be carrying out home care.
20   When back in the car or at a time that is convenient in the patient's home, the nurse looks at the GSM terminal which displays the message sent by the manager.

Depending on the content of the message, the nurse can either call the manager's extension directly, or can
25   merely acknowledge that the received message has been read. Once one of those two actions has been performed, the nurse decides to delete the message.

If the nurse's GSM terminal is disconnected from the network (which is unlikely assuming the nurse has just
30   received the message), then the terminal waits until contact is reestablished in order to send the acknowledgment, and the GSM terminal then informs the nurse.

If the nurse's GSM terminal cannot communicate with
35   the network because the network is overloaded, then it makes attempts at regular intervals to send the acknowledgment. If after a certain length of time or a

certain number of attempts the terminal has not managed
to send the acknowledgment, its interface informs the
nurse of this failure.

Variant 1: if the manager's electronic mail server
5   is unavailable (saturation, breakdown, etc.) or if the e-
mail address is wrong, then the network makes another
attempt at sending the acknowledgment in the form of e-
mail. If, after a certain length of time or after a
certain number of attempts, it has not been possible to
10   deliver the acknowledgment message to the manager's
server, then a conventional SMS message is sent to the
nurse reporting this failure.

The service handling the manager's e-mail is
permanently connected. Thus, as soon as the arrival of a
15   message on the e-mail server is notified, the
acknowledgment message is loaded into the terminal. Once
the manager has become aware of the acknowledgment
message, she is certain that the initial message has been
read.

20   Variant 2: the server for receiving read
acknowledgments from the GSM system generates a voice
message and then calls the number specified by the
manager. If the manager (or her personal answering
service) answers the call, then the message is read n
25   times in a loop as from answering (and if after n times
the manager has not hung up, the server hangs up).

If the manager is already on a call or if she does
not answer and if she subscribes to a "Top Message" type
answering service on the network, then the synthesized
30   voice message is left on the "Top Message" service.

If the manager is already on a call or does not
answer and is not a subscriber to a "Top Message"
service, then the server calls again a certain number of
times.

35   If, after a certain length of time or a certain
number of attempts, it has not been possible to deliver

the acknowledgment, then a conventional SMS message is sent to the nurse concerning this failure.

As soon as the manager answers, or listens to her personal answering service, or interrogates "Top
5   Message", she knows that her initial message has been read.

Variant 3: the server receiving read acknowledgments from the nurse's GSM terminal generates a new SMS message for the manager's GSM terminal. As in the preceding
10   variant, if, after a certain length of time or after a certain number of attempts, it has not been possible to send the new SMS message to the manager's GSM terminal, then a conventional SMS message is sent to the nurse concerning this failure.

15   Once the manager is aware of the SMS message that has reached her GSM terminal, she knows that the initial message has been read.

The description below with reference to the accompanying drawing given by way of non-limiting example
20   shows what the invention consists in and how it can be implemented.

Figure 1 is a diagram of a read acknowledgment system in accordance with the invention.

Figure 1 shows a system for acknowledging that a
25   message sent by a sending terminal 1 and received by a destination mobile terminal 2 has been read.

At the sending end, the system comprises, in addition to the sender of the message that is to be sent, a terminal 1 connected to the Internet and a Web
30   navigator, an e-mail service, and a telephone terminal.

In the example of Figure 1, at the receiving end, the system comprises, in addition to the addressee of the message, a mobile telephone 2 of the GSM type having a subscriber identification module (SIM) card. The SIM
35   card contains an application suitable for implementing the acknowledgment system of the invention.

The connection between the sending terminal 1 and the mobile terminal 2 is established via an intermediary server 3 and an SMS-C gateway 4.

The intermediary server 3 is an application server
5   suitable for implementing an acknowledgment system in accordance with the invention. It includes a finite-state controller in software, a Web server 30, an e-mail interface 31, and a network answering service ("Top Message"), and an interface 32 for communication with the
10   SMC-C gateway 4.

The Web server 30 comprises HTML/javascript pages including CGI script enabling message-sending requests to be received. It is capable of generating dynamic HTML pages in order to describe the status of each message
15   that has been sent at the request of the sender.

The e-mail interface 31 and "Top Message" enable the status of each message to be sent respectively by e-mail or by the "Top Message" service. A message may have any of the following statuses:
20   · not received by the addressee, GSM terminal 2 not within coverage;
· not received by the addressee, GSM terminal 2 busy;
· not received by the addressee, because of a
25   network transmission problem;
· received by the GSM terminal 2; and
· acknowledged by the addressee.

The SMS-C gateway 4 is a GSM telecommunications gateway enabling SMS messages to be routed between
30   applications servers, such as the intermediary server 3, and GSM terminals. It has a system for notifying reception, and more generally, it enables the applications servers to know:
· whether an SMS message has been received by a GSM
35   terminal;
· whether the destination terminal is out of coverage;

· whether the destination terminal is busy; and

· whether an error has occurred in transmission.

The acknowledgment system of Figure 1 operates as follows.

5   Using the terminal 1 connected to the Internet and its Web navigator, the person sending a message connects (a) to the Web server 30. Using a form constituted by an HTML page, the following fields are filled in:

· the identifier of the destination mobile terminal

10 for the message, in this case the number of the GSM terminal 2;

· the text of the message to be sent;

· the way in which read acknowledgment is to be returned. In a particular implementation, return can be

15 by e-mail. The sender of the message must then specify the associated identifier in the form, which in this case is constituted by the sender's e-mail address (assuming that this information has not already been given during earlier use);

20 · optionally the sender may supply the identifier of telecommunications means where the sender can be reached (assuming that this has not already been done during earlier use). This identifier is the sender's telephone number.

25 The sender of the message then clicks on a button for sending the form. The fields filled-in in the above manner are forwarded to the intermediary server 3 via the CGI script which sends a dynamic HTML page to the sender giving information about the status of messages that have

30 been sent, thus enabling the sender to keep track of message progress.

Thereafter, the intermediary server 3 formats the message so that it can be sent (b) to the SMS-C gateway 4, requesting that it be notified of receipt.

35 Reception of the SMS message by the gateway 4 is notified (c) to the intermediary server 3. This notification is returned back to the sender of the

message by dynamic HTML pages. In the event of an error in transmission, the server 3 makes attempts at regular intervals to send again. If the GSM mobile terminal 2 is out of coverage, then the server 3 request the SMS-C

5 gateway to alert it in the event of the terminal 2 reconnecting with the network.

The SMS message is then received (d) on the mobile terminal 2 and triggers a dedicated application in its SIM card so as to display a menu on the screen of the

10 terminal, the menu comprising the following options:

· acknowledge the message, and possibly also reply thereto in the form of a text message;

· make a voice call to the sender of the message via the sender's telephone.

15 The acknowledgment, optionally accompanied by a text message, is sent (e) to the gateway 4 and then (f) to the intermediary server 3, and finally (g) to the initial sender of the message using the method of return as specified initially, e.g. e-mail.

20 At any time, the sender of the message may act through the interface 31 to ask (h) the intermediary server 3 to provide the status of a message that has previously been sent. The various statuses are described above. The response is sent (i) in the form of an

25 electronic message, or by "Top Message".

CLAIMS

1/ A system for acknowledging that a message sent by a sender terminal (1) and received by a destination mobile terminal (2) has been read, the system being

5   characterized in that:

- said sender terminal (1) comprises means for:

- providing an identifier of the destination mobile terminal (2) for the message;

- generating the text of the message to be

10   sent; and

- indicating the method whereby read acknowledgment should be returned, accompanied by an associated identifier; and

- said mobile terminal (2) comprises means for:

15   - displaying the message sent by the sender terminal (1); and

- sending a read acknowledgment using the specified method of return.

20   2/ A system according to claim 1, characterized in that said method of returning the acknowledgment is an electronic message in the form of text or is a message generated by voice synthesis.

25   3/ A system according to claim 1 or claim 2, characterized in that the sender terminal (1) further comprises means for supplying the mobile terminal (2) with the identifier of telecommunications means where the sender of the message can be reached.

30

4/ A system according to any one of claims 1 to 3, characterized in that the sender terminal (1) further comprises means for requesting an acknowledgment of receipt of the message to be sent using said method of

35   returning read acknowledgment.

5/ A system according to any one of claims 1 to 4, characterized in that it present a first interface (A) giving the addressee two options:

    · to send the acknowledgment that the message has
5 been read to the sender terminal (1); or

    · to make a voice call to the sender of the message.

6/ A system according to any one of claims 1 to 5, characterized in that it presents a second interface (B)
10 giving the addressee two options:

    · to archive the message; or

    · to delete the message.

7/ A sender terminal (1) for implementing the
15 acknowledgment system according to any one of claims 1 to 6, characterized in that it comprises means for:

    · providing an identifier of the destination mobile terminal (2) for the message;

    · generating the text of the message to be sent; and
20   · indicating the method whereby read acknowledgment should be returned, accompanied by an associated identifier.

8/ A sender terminal (1) according to claim 7,
25 characterized in that it further comprises means for supplying the mobile terminal (2) with the identifier of telecommunications means where the sender of the message can be reached.

30 9/ A sender terminal (1) according to claim 6 or claim 7, characterized in that it further comprises means for requesting acknowledgment of receipt of the message using said method of returning the read acknowledgment.

35 10/ A mobile terminal (2) for implementing the acknowledgment system according to any one of claims 1 to 6, characterized in that it comprises means for:

· displaying the message sent by the sender terminal (1); and

· sending a read acknowledgment using the specified method of return.

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FIG.1